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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DUBASKY, GIGIL

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/676,940	Applicant(s) BARSOUM ET AL.	
	Examiner GIGI L. DUBASKY	Art Unit 2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50,56-59,72,73,82,83,93,94 and 96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50,93,94 and 96 is/are allowed.
- 6) ☒ Claim(s) 56-59 and 72-73 is/are rejected.
- 7) ☒ Claim(s) 82 and 83 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Miscellaneous

Please note that the examiner of record for the prosecution of this application has changed.

Response to Arguments

Claims 50, 56-59, 72-73, 82-83, 93-94 and 96 are pending.

1. Applicant's arguments with respect to claim 56 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 56-59 and 72-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broughton et al (US 4807031) in view of J.D. Neal (Hardware Level VGA and SVGA Video Programming Information Page – of the record).

Regarding claim 56, Broughton discloses a method comprising:

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optically obtaining a frame of a video signal from a display device (see Figure 1; Col 4 line 59 through Col 5 line 27 for the optical transducer 16 having diode 18 is aimed at viewing area 14c to obtain the viewing area 14d which is non-interlaced frame (a single field in a frame)— see Col 6 lines 29-35);

determining whether auxiliary data is present in the frame (Col 6 lines 16-67 for the luminance modulation resulting in the alternate raising and lowering of luminance levels of horizontal lines in non-interlaced frame enables the detector to detect and decode the binary data encoded in the frame) by performing a field comparison (Col 8 lines 25-44 for comparing the high and low luminance modulation feature of adjacent lines within a field by the “level comparator 66” in Figure 3) on a plurality of segments of a first field and a plurality of corresponding segments of a second field for the frame (Col 7 lines 50-54 for achieving higher data rates by dividing the viewing area 14c into multiple regions, each of which is independently modulated. In other words, Broughton discloses a non-interlaced frame (a single field in a frame) is segmented into a plurality of segments, each segment being modulated independently to achieve a higher data rate. In the NTSC format, there are two “consecutive” fields in a frame (interlaced frame). Therefore, in a NTSC modulation scheme using the teaching of Broughton, the level comparator 66 would need to determine whether auxiliary data is present in each segment by performing a field comparison on a plurality of segments of a first field and corresponding segments of the second field since a segment is modulated independently). Broughton also discloses the normal video synchronizing signals, horizontal sync, vertical sync and chrome reference are transmitted during the blanking

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interval (Col 11 line 65 through Col 12 line 3) and blank adder 108 in Figure 5B produces a blank signal during horizontal retrace.

However, Broughton does not explicitly disclose seeking and synchronizing to a vertical retrace period of the video signal.

Neal discloses seeking and synchronizing to a vertical retrace period of the video signal is useful for determining the end of a display period used by applications that need to update the display every period such as when doing animation (see Monitoring Timing section).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Broughton's system with the teaching of Neal about seeking and synchronizing to a vertical retrace period which is useful for determining the end of a display period, so to allow entertainment devices to display animation based on the received auxiliary data correctly and to update the display every period.

Regarding claim 57, Broughton in view of Neal discloses all limitations of the method as discussed in the rejection of claim 56. Broughton in view of Neal further discloses wherein the field comparison includes:

subtracting intensity of the plurality of corresponding segments of the second/first field from the plurality of segments of the first/second field (taught by Broughton; Col 8 lines 25-44 for looking for a difference in luminance intensity in adjacent lines by means of a level comparator 66. This example however relates to a non-interlaced frame where

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adjacent lines are of one field as shown in fig. 2B. As discussed above, Broughton discloses that his method of modulation can be applied to an NTSC frame where alternate lines within consecutive fields are modulated (Col 6 lines 29-35). Therefore, the level comparator 66 would be comparing adjacent modulated lines from two separate fields in a frame).

Regarding claims 58-59, Broughton in view of Neal discloses all limitations of the method as discussed in the rejection of claim 57. Broughton in view of Neal further discloses:

decoding a logic one as the auxiliary data when a segment of the first field is encoded (increased luminance) and a corresponding segment of the second field is not encoded (decreased luminance) (taught by Broughton; Col 3 lines 8-11 for the addition of a (luminance) subcarrier when a binary 1 is to be encoded in decoding apparatus); and decoding a logic zero as the auxiliary data when the segment of the first field is not encoded (decreased luminance) and the corresponding segment of the second field is encoded (increased luminance) (taught by Broughton; Col 3 lines 8-11 for removal of a (luminance) subcarrier when a binary 0 is to be encoded in decoding apparatus).

Broughton discloses those functionalities can be performed vice versa (Col 3 lines 8-11). The raising the luminance of the second field to complement the removal of the luminance of the first field so that the overall average luminance of, and contrast between, the video features and the background within viewing area 14c are preserved (Col 6 lines 57-68).

Regarding claim 72, Broughton in view of Neal discloses all limitations of the method as discussed in the rejection of claim 57. Broughton in view of Neal further discloses the benefit of providing "interactive video educational and entertainment apparatus that permits the user to interact with a television program in real time (Col 2 lines 18-22 and 33-35).

Regarding claim 73, Broughton in view of Neal discloses all limitations of the method as discussed in the rejection of claim 72. Broughton in view of Neal further discloses wherein the benefit is textual information ("ASCII text" Col 11 lines 16-19).

Allowable Subject Matter

4. Claims 50, 93-94 and 96 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the arts of record either alone or in combination fails to particularly disclose or suggest "modulating at least one first field segment of the plurality of segments of the first field and at least one second field segment of the plurality of segments of the second field with auxiliary data by altering the pixel value of the plurality of pixels of the first field segment and the second field segment, and wherein at least one second corresponding field segment in the second field that corresponds to the first modulated field segment is not modulated, at least one first corresponding field segment in the first

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field that corresponds to the second modulated field segment is not modulated, and the plurality of pixels in a corresponding field segment of a field of the frame that correspond to the plurality of pixels in a particular modulated field segment of the other field of the frame have a different pixel value based on the modulating of the first field segment and the second field segment” as claimed in claim 50.

All claims 93-94 and 96 are allowed because they are dependent on indicated allowable base claim 50.

5. Claims 82-83 are objected to as being dependent upon a rejected base claim 56, which is still broad enough to be read on by the arts of record, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the arts of record either alone or in combination fails to particularly disclose or suggest “waiting a sufficient amount of time for a vertical refresh of the picture; determining if a second display section of the picture presented on the display device is black; looking beyond the first display section when the picture presented on the display device for the second display section is not black; and locking on a vertical retrace period when the second display section is black” as claimed in claim 82 and “releasing the lock on the vertical retrace period after a few seconds” as claimed in claim 83.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIGI L. DUBASKY whose telephone number is (571)270-5686. The examiner can normally be reached on Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

GD